

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-19. Cancelled.

20. (Original) A portion of a wrap-around-gated field-effect transistor, the portion comprising:

an silicon-on-insulator (SOI) island comprising side surfaces forming a periphery and extending, for a length, along a major axis in the horizontal direction; and

a gate electrode surrounding and supporting the SOI island, the gate electrode extending in a vertical direction from a handle wafer and having a thickness, in the horizontal direction, less than the length of the SOI island such that a portion of the SOI island extends on one side of the gate electrode and another portion of the SOI island extends on another side of the gate electrode, the gate electrode comprising:

a first portion below the SOI island, a second portion on one side of the SOI island, and a third portion above the SOI island such that the gate electrode extends more than half-way around the periphery of the SOI island.

21. (Original) The portion according to claim 20, wherein a first edge face of the SOI island extends outward on one side of the gate electrode and a second edge face of the SOI island extends oppositely outward on another side of the gate electrode.

22. (Original) The portion according to claim 20, wherein the gate electrode has a cross-sectional profile that is C-shaped.

23. (Original) The portion according to claim 20, wherein a portion of a top surface of the SOI island is exposed.

24. (Original) The portion according to claim 20, wherein at least a portion of the SOI island is supported underneath by an oxide layer on the handle wafer.

25. (Original) A field-effect-transistor comprising:

a silicon-on-insulator (SOI) island comprising a surface periphery and two edge faces, the SOI island oriented substantially in a horizontal direction;

a wrap-around gate electrode oriented in substantially a vertical direction intersecting with the SOI island in-between the two edge faces such that the SOI island, such that the wrap-around gate electrode extends more than half-way around the surface periphery of the SOI island;

a source region formed on a first part of the SOI island, on one side of the gate electrode;
and

a drain region formed on a second part of the SOI island, on another side of the gate electrode.

26. (Original) The field-effect transistor of claim 25, wherein a portion of a bottom surface of the SOI island on both sides of the gate electrode is exposed.

27. (Original) The field-effect transistor of claim 25, wherein at least a portion of the SOI island is supported underneath by an oxide layer.

28. (Original) The field-effect transistor of claim 25, wherein the wrap-around gate electrode extends entirely around the surface periphery of the SOI island.